Notice of Allowability	Application No.	Applicant(s)	
	10/599,028	URUSHIYA, HIROYUKI	
	Examiner	Art Unit	
	Jason Heidemann	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *09/18/2006*.

2. ☒ The allowed claim(s) is/are *1-13*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date See Continuation Sheet
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20100121* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Jason Heidemann/
Examiner, Art Unit 2624

Continuation of Attachment(s) 3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date: 09/18/2006, 10/03/2007.

DETAILED ACTION

1. Claims 1-13 are pending

2. Regarding Claim 7, the claim is in a method claim format but there is a limitation stated in the claim, "body movement correction step of executing a correction of a body movement by executing geometric transformation to the plural projected images of which the projected angles of the radiation are different" that ties these claims/methods to a machine/computer.

Priority

This application claims benefit of foreign priority under 35 U.S.C. 119(a-d) of a Japanese patent application, JP 2004-141490, filed May 11, 2004.

This application is a national stage entry of PCT/JP05/08817 filed 05/09/2005.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given by Leonard Diana from an phone response on January 21st, 2010 in response to an examiner's initiated telephone interview with Leonard Diana that occurred on January 8th, 2010.

13. (Currently amended) A computer-readable medium containing a computer program for causing a computer to execute:

a geometric transformation parameter solving step of acquiring, from among plural projected images of which projected angles of a radiation are different from others, geometric transformation parameters between at least the two projected images of which the projected angles of the radiation overlap each other;

a changing step of gradually changing the geometric transformation parameters acquired in said geometric transformation parameter solving step, within a predetermined range of the projected angles of the radiation; and

a body movement correction step of executing a correction of a body movement by executing geometric transformation to the plural projected images of which the projected angles of the radiation are different, by using the respective changed geometric transformation parameters.

Allowable Subject Matter

3. Claims 1, 7, 13 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

Ivanovic et al. (Patient Motion Correction for Multicamera SPECT Using 360" Acquisition/Detector, Nuclear Science Symposium, 1997. IEEE, vol.2, 9-15 Nov 1997,

Pages 989-993), teaches a method of detecting and reducing the effects of patient motion in a SPECT system. Ivanovic teaches the comparison of radiation images that overlap acquired at different scans. Ivanovic is able to detect motion using a cross-correlation method. Ivanovic further teaches two methods for he correction of movement in the images, first, using a summation method of three images that overlap, and secondly, a time normalization of the projection frames to replace the frame(s) affected with motion.

Cooper et al. (Detection of Patient Motion During Tomographic Myocardial Perfusion Imaging, The Journal of Nuclear Medicine Vol. 34 No. 8 1341-1348 1993), teaches several method for detecting patient motion in tomographic images. Cooper teaches the use of cross-correlation for the detection of motion, using different successive planar images (overlapping images).

Matsuura et al. (US 7,327,823) teaches a system and method for the detection of body movement during CT scanning. Matsuura determines movement of the patient during the scanning by comparing overlapping images, if motion is detected, the radiograph is repeated.

Regarding Claim 1, the prior art of record, all fail alone or in combination to disclose or render obvious "a changing unit adapted to gradually change the geometric transformation parameters acquired by said geometric transformation parameter solving

unit, within a predetermined range of the projected angles of the radiation," this, in combination with the other respective claim limitations.

Regarding Claims 7 and 13, the prior art of record, all fail alone or in combination to disclose or render obvious a changing step of gradually changing the geometric transformation parameters acquired in said geometric transformation parameter solving step, within a predetermined range of the projected angles of the radiation" this, in combination with the other respective claim limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nowak; David J. US 4858128 A View-to-view image correction for object motion

Langan; David et al. US 20060133564 A1 Method and apparatus for correcting motion in image reconstruction

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Heidemann whose telephone number is (571)-270-5173. The examiner can normally be reached on Monday - Thursday/7:30 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications. TC 2600's customer service number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Heidemann/ 01/21/2010
Examiner, Art Unit 2624

/Andrew W Johns/
Primary Examiner, Art Unit 2624